**Expert Group 1: Biological Sciences**

**Task:** Living things grow, change and have offspring. Reproduction can be asexual or sexual. Select 2 different organisms- plant or animal. One must reproduce sexually and the other asexually. Draw a diagram to outline the lifecycle of each of the organisms and describe how they are different. Make sure you can explain the difference between sexual and asexual reproduction.

**Reproduction**

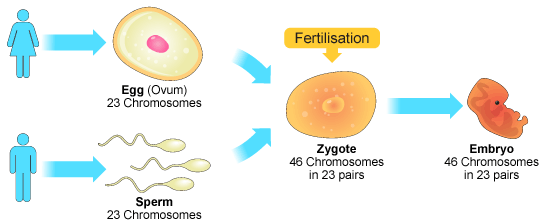
The Biological process where new organisms (commonly known as offspring) are produced by existing organisms (commonly known as the parent/s). This process is generally grouped under two methods; sexual or asexual reproduction.

Parents share their genetic information with their offspring through chromosomes in the nucleus. Sexual reproduction produces offspring that are genetically similar to their parents, whereas asexual reproduction produces offspring that are genetically identical to the parent.

For this task I chose to explore the human being sexual reproduction cycle and the plant asexual reproduction cycle.

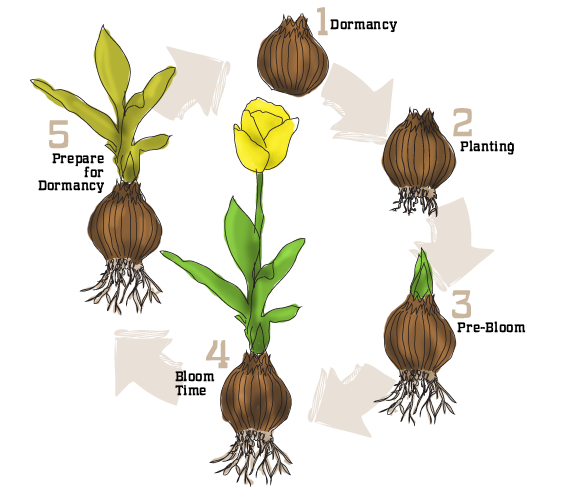
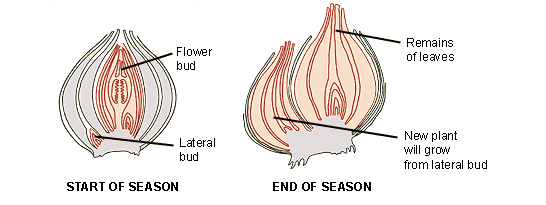
**Sexual reproduction**-

Organisms have sex cells called gametes. When discussing humans, male sex cells are called sperm and the female sex cells are called eggs. Sexual reproduction in humans involves the fusion of one male and one female gamete (sperm and egg) and is known as fertilisation. Genetic information is taken from both the male and the female parent and used to create a diverse range of offspring.



**Asexual reproduction-**

Asexual reproduction occurs without the need of two parents. As there is only one parent there is no fusion or mixing of genes, resulting in the offspring being genetically identical to their parent. Asexual reproduction in plants can take many different forms. Some develop underground food organs that allow the plant to develop the next year, for example the daffodil.

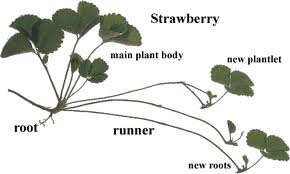


A daffodil bulb at the beginning and end of the growing season, with a lateral bud where the new plant will grow

Not all plants produce this way. Some produce plantlets on their side like the spider plant.



Others, like the strawberry produce runners with plantlets on them.



|  |  |  |
| --- | --- | --- |
| **Comparison Chart** | | |
|  | **Sexual reproduction** | **Asexual reproduction** |
| **Organisms required to reproduce** | Two | One |
| **Sex Cell involvement** | Formation of gametes (sex cell) | No Formation of gametes (sex cell) |
| |  | | --- | | **Unit of reproduction** | | Gamete | May be whole parent body or a bud or a fragment or a single somatic cell |
| **Advantages** | * Genetic variation in offspring * Allows for evolution * Can’t all be wiped out by the same disease | * Suit organisms that are unable to look for mates * Many offspring can be produced in a short amount of time |
| **Disadvantages** | * Requires energy and effort to find a mate * Requires both sexes to participate | * Entire group can be wiped out by disease or environment changes * No variation in offspring |

*Adapted from http://www.diffen.com/difference/Asexual\_Reproduction\_vs\_Sexual\_Reproduction*